

body member for closure thereof, said insert being one of a plurality of interchangeable inserts; and

cont
wherein said insert is a shearable member adapted for shearing and opening said central opening when a predetermined differential pressure is applied across said shearable member or a substantially non-shearable disk adapted for substantially permanent closure of said central opening.

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8 ~~8~~. (Amended) A cementing plug for use in a cementing casing in a well, comprising:

a body member defining a central opening therethrough and having a longitudinal axis; [and]

an elastomeric jacket disposed around said body member and having a wiper cup extending therefrom, said wiper cup defining a conical outer surface extending upwardly and outwardly at an acute angle with respect to said longitudinal axis, wherein said outer surface is deflected into substantially cylindrical, wiping engagement with an inner surface of a casing when the plug is disposed therein;

an insert disposed in said central opening for at least temporary closure thereof, said insert being a selected one of a plurality of inserts; and

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wherein said insert is a shearable member adapted for shearing and opening said central opening when a predetermined differential pressure is applied across said shearable member or a substantially non-shearable disk adapted for substantially permanent closure of said central opening.

Please add new claims 44-65.

31 ~~32~~ ~~44~~. A plug for use in a well casing, comprising:
a body member defining a central opening therethrough;
a jacket disposed around said body member and having a wiper cup extending therefrom for engaging an inner surface of the casing; and

1 ~~31~~
an insert disposed in said central opening for at least temporary closure thereof, wherein said insert is a shearable member or a substantially non-shearable disk.

B3 ~~32~~ ~~30~~ ~~31~~ ~~32~~
45. The plug of claim ~~44~~ wherein said insert is one of a plurality of shearable and non-shearable inserts.

~~33~~ ~~34~~ ~~32~~ ~~33~~
46. The plug of claim ~~45~~ wherein said inserts are interchangeable.

~~34~~ ~~35~~ ~~31~~ ~~32~~
47. The plug of claim ~~44~~ wherein said insert is a substantially flat disk having a substantially uniform thickness.

35 ~~36~~ 31 ~~32~~
48. The plug of claim ~~44~~ wherein said shearable member is adapted for shearing and opening said central opening when a predetermined differential pressure is applied across said shearable member and said non-shearable disk is adapted for substantially permanent closure of said central opening.

36 ~~37~~ 31 ~~32~~
49. The plug of claim ~~44~~ wherein said shearable member is made of a rupturable material.

37 ~~38~~ 31 ~~32~~
50. The plug of claim ~~44~~ wherein said shearable member is one of a plurality of available thicknesses so that the shear pressure may be predetermined.

39 ~~40~~ 31 ~~32~~
51. The plug of claim ~~44~~ wherein said shearable member comprises:

a ring portion; and

a domed portion extending from said ring portion.

38 ~~39~~ 37 ~~38~~
52. The plug of claim ~~50~~ wherein said ring portion and said domed portion are integrally formed.

40 ~~41~~ 31 ~~32~~
53. The plug of claim ~~44~~ wherein said insert is positioned on a shoulder defined on said body member.

41 ~~42~~ 31 ~~32~~
54. The plug of claim ~~44~~ wherein said jacket is made of an elastomeric material.

42 ~~48~~

31 ~~32~~

55. The plug of claim ~~44~~ wherein said wiper cup is one of a plurality of such wiper cups.

43 ~~44~~

31 ~~32~~

56. The plug of claim ~~54~~ wherein said wiper cup has an conical outer surface extending upwardly and outwardly at an acute angle with respect to a longitudinal axis of the plug.

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57. A plug for use in a well casing, comprising:
a body member defining a central opening therethrough;
and
an insert positioned for at least temporary closure of
said central opening, wherein said insert comprises:
an outer ring portion, and
an inner portion extending from said outer ring
portion, said inner portion being thinner than said outer ring
portion.

45 ~~46~~

44 ~~45~~

58. The plug of claim ~~57~~ wherein said outer ring portion and said inner portion are integrally formed.

46 ~~47~~

44 ~~45~~

59. The plug of claim ~~57~~ wherein said outer ring portion and said inner portion form an internal corner.

47 ~~48~~

46 ~~47~~

60. The plug of claim ~~59~~ wherein said corner is radiused.

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61. The plug of claim 57 wherein said inner portion has a variable thickness. C

62. The plug of claim 61 wherein said inner portion has a first thickness at a center thereof and a second thickness at an outer portion thereof adjacent to said outer ring portion.

49 50 48 49
63. The plug of claim 62 wherein said inner portion is an outwardly convex domed portion.

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64. The plug of claim 63 wherein said domed portion has a height above said outer ring portion approximately equal to said first thickness.

51 52 48 49
65. The plug of claim 62 wherein said first thickness is less than said second thickness.

REMARKS

The Office Action mailed June 12, 2000 has been reviewed. As a result, claims 2, 6, 12 and 13 have been canceled without prejudice or disclaimer; claims 1 and 10 have been amended; and new claims 44-65 have been added. The reconsideration of this application in view of such amendments and the following remarks is respectfully requested.